



April 1, 2006

**To:** Mayor Martin J. Chavez and Albuquerque City Council

**From:** Wayne Evelo - Chairman, Energy Conservation Council (ECC), 4/1/05-3/31/06

**Subject:** **Energy Conservation Council Annual Report Transmittal**

On behalf of the Energy Conservation Council (ECC), I am pleased to submit the Annual Report regarding our past year's activities and accomplishments.

The last two years of hard work are paying off. The original projects are being implemented and are generating substantial benefits. The current bond cycle will fund another round of energy efficiency projects.

The first bond cycle generated approximately \$1.2M for energy savings projects, which the city has turned into \$600K of savings every year for the foreseeable future. The implementation of these energy savings projects will pay for themselves very quickly, and they will continue to save money. The money saved can be used to fund other critical activities for the city's residents. The efficient use of funds means the city can accomplish more with the same funding. This will also mean collateral benefits of over 3 million gallons of water saved, 3.4 million pounds of coal not burned, and a cleaner and safer city.

The "Sustainability: A Town Hall on Albuquerque's Energy Future" and the passing of Resolution R-05-329 "Adopting Policies to Establish and Implement a City Renewable Energy Initiative" were some of the highlights of my term. These very far reaching activities conducted with bi-partisan support, when implemented, will make Albuquerque one of the most sustainable cities in the country, if not the world. This tremendous accomplishment by the City Council and Mayor has created a vision and a plan for Albuquerque's sustainable future that includes high wage jobs, excellent facilities for the city employees to better serve city residents, more efficient use of resources, more use of clean locally produced energy, and a cleaner environment. The City of Albuquerque and ECC have been working hard and will continue our efforts over the next few years to develop and implement the programs created due to the town hall meeting and the resolution.

Prior to his retirement, the ECC worked closely with Richard Harding, Deputy Director, Facilities, & Energy Management Division. His dedicated service to the City and the ECC will be missed. The ECC looks forward to working with Ken Mitchell and John Soladay.

In conclusion, we are deeply committed to be of service to the City of Albuquerque by improving the quality of life in our community and reducing City operating expenses by recommending energy efficiency projects, and educating the community. Please review this document and appendices for more detailed examples of the Energy Conservation Council contributions.

## MAYOR, CITY OF ALBUQUERQUE

Martin J. Chavez

## CHIEF ADMINISTRATIVE OFFICER

Bruce Perlman

## CHIEF OPERATING OFFICER

Ed Adams

## CHIEF FINANCIAL OFFICER

Gail Reese

## ALBUQUERQUE CITY COUNCIL

Martin Heinrich, President

Don Harris, Vice-President

Isaac Benton

Michael J. Cadigan

Craig Loy

Sally Mayer

Debbie O'Malley

Ken Sanchez

Brad Winter

## MUNICIPAL DEVELOPMENT DEPARTMENT

John R. Castillo, P.E. Director

Ken Mitchell, ASCMT, CFM, Facilities Manager

Richard Harding, Deputy Director (retired 12/05)

## ENERGY CONSERVATION COUNCIL

Wayne Evelo, Chair

Dave Melton, Vice-Chair

Frank Burcham

Bill Gross

Kenneth Maestas

Mike Minturn

Suzanne Probart

Ron Rioux

Howard Stephens

Jean Arya (retired 12/05)

## TECHNICAL COMMITTEE

Richard Harding, Chair through 2005

Ken Mitchell, CFM, Chair beginning 2006

Suzanne Busch

Gene Bustamante

Wayne Riddle

Mark Sandoval

## SUPPORT

Carolyn Fudge, Legal,

Connie Tachias, Administrative

Laurie Roach, Technical Writer

## ACKNOWLEDGEMENTS

The Mayor and City Councilors should be commended for their foresight in creating the 1% for Energy Ordinance. The City of Albuquerque is setting a tremendous example for the rest of the country, by committing to a sustained program of energy efficiency implementation.

The tremendous success of the ECC during this reporting period would not have been possible without the



*Richard Harding,  
strong advocate for  
ECC, retired  
December 2005.*

exceptional support of the City of Albuquerque. The COA support was provided by many city employees, but special recognition must be given to several people including Gene Bustamante, Connie Tachias, Laurie Roach, Richard Harding and more recently Ken Mitchell and John Soladay. Gene, Connie, and Richard were always passionate supporters of the ECC. They would stay late and come in early, always with a smile, to help the ECC achieve its mission. Their suggestions and advice were very insightful and eagerly welcomed. They are true assets to the COA and the ECC. We were fortunate to have such wonderful support.

The outstanding efforts of the ECC members, both Board Members and Advisory Board members, must be recognized. This all-volunteer board accomplished an incredible amount for the City. All members worked tirelessly in support of the ECC. This Annual Report is a testament to everything that has been accomplished. Despite this tremendous workload, turnover on the Board has been very low. The only member who reluctantly retired was Jean Arya. Her new job conflicted with our regular meetings so she felt it was necessary to resign. Among other things, Jean was the key force behind “Energy Matters” on the GovTV channel. She was a regular volunteer for ECC actions and always provided us with quality products on the tight schedules required. Thank you Jean, you will be missed.



*Jean Arya is presented an  
award of appreciation by  
Wayne Evelo.*

In conclusion, it has been a great year because of everyone’s dedication and hard work. Thanks to all!

## EXECUTIVE SUMMARY

The last two years of hard work are paying off. The original projects are being implemented and are generating substantial benefits. This year's bond cycle will fund another round of energy efficiency projects.

The first bond cycle generated approximately \$1.2M for energy savings projects, which the city has turned into \$600K of savings every year for the foreseeable future. The implementation of these energy savings projects will pay for themselves very quickly and they will continue to save money. The money saved can be used to fund other critical activities for the city's residents. The efficient use of funds means the city can accomplish more with the same funding. This will also result in over 3 million gallons of water saved, 3.4 million pounds of coal not burned, and a cleaner and safer city.

The ECC was able to support the purchases of low emission hybrid vehicles, bio-fuels, and waste to energy systems resulting in a cleaner city.

Furthermore, the implementation of Light Emitting Diodes (LED) traffic lights results in brighter lights that are easier to see, use 90% less energy, and last significantly longer requiring less maintenance. This results in safer intersections and fewer traffic accidents.



*Green light emitting diode (LED) on City Traffic signals*

# INTRODUCTION

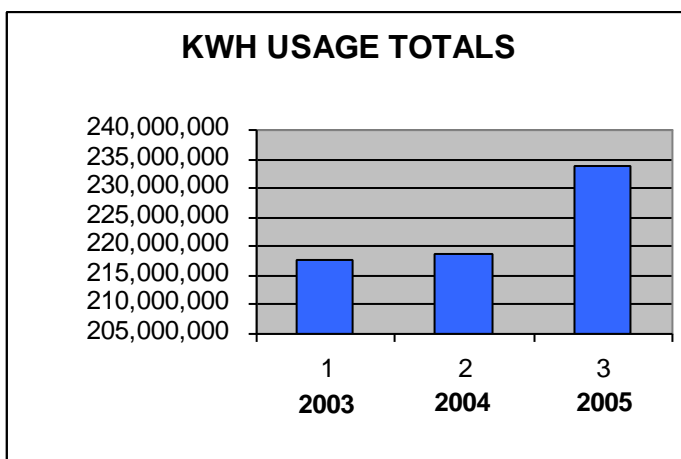
This Annual Report provides details about how the ECC is accomplishing the vision of energy conservation and education. The ECC mission statement guides our actions. The mission of the ECC is as follows:

“Champions of Albuquerque’s quality of life; promoting cost effective, innovative resource management, energy education and community involvement.”

The Energy Conservation Council’s goals for the last year included the following:

- Educate local community on the successes generated by the Mayor and City Council’s implementation of the 1% for Energy Ordinance, which created the ECC.
- Refine the Project Selection Criteria, based on lessons learned from the first round.
- Generate a prioritized list of potential projects.
- Replace the departing Board members with members of the same high caliber.
- Create an Advisory Board to develop a pool of outstanding expertise to assist the Board during the year and replace the experts, which will inevitably leave.
- Create a Mission statement to guide ECC.
- Support Albuquerque as it becomes the Solar City.
- Keep Albuquerque a great place to live.

The city was able to use the 1% funding to produce savings in multiple areas within many city departments. Despite rising demand in energy, the city has maintained electric cost under \$17 million and usage under 240 million KWH over many years. The city’s energy savings accomplishments can be used as a model for the public to follow. The usage over three years is illustrated in the table. All data can be found in the appendix.



# TABLE OF CONTENTS

## **ECC SUSTAINABILITY ..... 9**

Advisory Board Formation  
ECC Business Cards  
ECC Promotional Brochure  
Membership Recruiting  
Mission Statement Development

## **EDUCATION AND AWARENESS ..... 11**

ECC Homepage on COA Website  
ECC Newsletter and Distribution  
Energy Conservation Education Plan  
Gov TV 16 (Energy Matters) Programming  
Exposure and Information Exchange Opportunities

## **PROJECT DEVELOPMENT ..... 15**

Alternative Transportation Success  
CIP Fund Accomplishments  
    Bio Diesel  
    Civic Plaza Underground Parking  
    HVAC Upgrades  
    Hybrid Vehicles  
    Isotopes Park  
    LED Lights  
    Used Oil Heaters Pino  
    Variable Speed Motor  
Clean Energy Grant Application  
LEED and Governor's Executive Order  
Renewable Energy Report, Rebate Program  
Solar Energy Incentives Program  
Neighborhood Solar

## **POLICY DEVELOPMENT ..... 21**

IRB Scoring Update  
Legislation – F/S R-05-329  
Standards - New Residential Development

**STRATEGIC PLANNING..... 23**

- 1% Project Status/Environmental Impact Sheet
- Energy Efficiency Upgrades
- Green Certificates for Renewable Energy
- Natural Design Energy Management Plan
- On-Site Power Generation
- Renewable Fleet Fuels

**STUDIES..... 26**

- Energy Savings Performance Potential
- Landfill Gas
- Solar Survey

**APPENDICES ..... 29**

- Council Bill FSO-02-70, ECC Ordinance
- Council Bill FS-R-329, Resolution
- Senate Memorial 5
- Superintendent’s Letter from APS
- Executive Order 2006-001
- ECC Newsletter
- Project Impact Sheet
- ECC Brochure – in side pocket of binder
- Consumption Report Spreadsheets
  - Electric Usage and Costs
  - Natural Gas Usage and Costs
  - Fuels and Lubricant Costs



## **ECC SUSTAINABILITY**

### **Advisory Board Formation**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-2 (I)**

The ECC felt it was essential to have a system of succession planning for ECC membership. Consequently, the ECC created a non-voting Advisory Board. ECC Advisory Board members, if appointed by the Mayor and approved by the city council, could quickly and easily transition to the roll of a voting board member.

**Results Summary:** The advisory board currently consists of a small group of very talented individuals who have previously served on the board as well as those who have not previously served. They are all experts who are equally passionate about energy conservation and offer valuable insights and recommendations.

### **ECC Business Cards**

#### **Ordinance Reference – FSO 02-70 Section 3 Chapter 14-8-5-2**

The need was identified for ECC members to be able to identify themselves as part of the council when they are at public functions representing the City of Albuquerque's ECC. They also need a quick and consistent way to inform others when asked: "What is the ECC?"

**Results Summary:** For the first time since the ECC's existence, the City has provided each member with a set of business cards listing the mission statement, contact information and the web address. The business cards will give members additional credibility when representing the council.

### **ECC Promotional Brochure**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-2 (E)**

In order to inform and educate the public and potential partners about the projects and programs of the ECC, the members agreed that they needed some form of literature available at events, meetings, and displays.

**Results Summary:** A low-cost brochure containing the ECC History, ECC Mission Statement, Membership Information, Meeting Schedule, and program descriptions such as the ECC "Energy Matters" TV Series, the Newsletter and Web Page was produced. The brochure will be used in several ways to consistently communicate, promote and sustain the mission of the ECC in a professional manner.

## **Membership Recruiting**

### **Ordinance Reference – FSO 02-70 Section 3 Chapter 14-8-5-2**

The COA is always on the look out for talented people to participate on the ECC. The Mayor appoints members and the City Council approves their membership which is voluntary with staggered terms. The ECC operates with support of the City's Facility and Energy Management Office.



**Results Summary:** All members of the ECC are continually recruiting new potential members by increasing the awareness of the council. Resumes are always accepted, and interested individuals who feel they qualify are asked to submit their letter of interest and resume to Ken Mitchell, Facilities Manager, 1801 Fourth Street Building B, Albuquerque, New Mexico, 87102. Three current members' terms will expire in April 2006. An Advisory Board has been created to use in an effort to find potential ECC members. Advisory Board members are recruited by participation in local energy/conservation association meetings and networking at various functions such as the New Mexico Solar Energy Associations' Solar Fiesta and Town Hall meetings.

## **Mission Statement Development**

### **Ordinance Reference – FSO 02-70 Section 3 Chapter 14-8-5-2**

A mission statement was deemed to be important for ECC Sustainability to clearly communicate the purpose of the Council.

**Results Summary:** The members brainstormed several mission statements. After much discussion and an in-depth review of a list of possibilities, the members voted on the following ECC mission statement as mentioned in the introduction: "Champions of Albuquerque's quality of life, promoting cost effective, innovative resource management, energy education and community involvement."

## **EDUCATION AND AWARENESS**

### **ECC Homepage on City of Albuquerque Website**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D)**

The COA Website at <http://www.cabq.gov/energy> continues to be enhanced and updated to include current ECC information on members, meetings, newsletters, reports and legislation.

**Results Summary:** Inquiries are received monthly as a result of people browsing the site. Additions to this website during the past year include, “Albuquerque’s Environmental Story”, updated newsletter samples, Energy Funds Impact Sheet, new legislation, FS-R-329 and new “Energy Matters” programs.

### **ECC Newsletter and Distribution**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D)**

The ECC newsletter is written and distributed with the purpose of increasing awareness of energy issues, current programs, meetings, events, seminars, special energy achievements, educational opportunities and general council news. By increasing the distribution, more individuals may be educated on important and timely energy subjects. The goals and vision of the current ECC membership will continue to be communicated through this medium.

**Results Summary:** During the ECC Chair’s term from March 2005 – March 2006, three newsletters were distributed to more than 250 readers each. The distribution list continues to expand, and members continue to provide ideas for articles of interest to the distribution. Feedback has been positive. Current and back-issues of the ECC newsletter also appear on the web site. See the appendix for copies of the ECC newsletter.

### **Energy Conservation Education Plan**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D)**

The development of an Education Plan by March 30, 2006 was guided by input from ECC members, stakeholders and decision makers. Elements include methods and resources needed to educate citizens, city employees, professional groups, the business community, builders, educators, elected officials, community organizations, and other key persons about energy conservation.

**Results Summary:** The Energy Conservation Education Plan has been developed. The full plan is available at upcoming ECC meetings. To develop this plan, a scoping study was conducted to identify stakeholders and key elements of the Education Plan that fulfills the mandates set out in the bill. The purpose of this

scoping study was to outline the plan elements, associated issues and budget required to develop a City of Albuquerque five-year energy conservation education plan. Input has been provided and members worked together to create an effective plan to disseminate the study and report on the feedback.

### **GOV TV 16 (Energy Matters)**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D and E)**

One of the ECC's most valuable education and awareness tools is the Energy Matters Program on Gov TV 16. This program has been in effect since February 2004. As an education and awareness vehicle, the ECC continues to be represented in and very supportive of this effort.

**Results Summary:** Since April 2005, there have been nine recorded programs and topics with a variety of quality guests. Evidence of viewing is seen through a number of requests for educational video copies.

<b>Date</b>	<b>Topic</b>	<b>Guests</b>
<b>April</b>	Renewable Energy in Public Buildings	Odes Armijo Caster, Sacred Power; Rene Parker, Select Engineering Services
<b>May</b>	How APS Saves Energy	David Robertson, Albuquerque Public Schools; Lynne Thomas, Global Energy.
<b>June</b>	Utility Energy Efficiency Plans	Gail Ryba, SWEEP; Steve Bean, PNM
<b>July</b>	New Mexico Solar Energy Association (NMSEA).	Marlene Brown and Mary McArthur, NMSEA.
<b>September</b>	Flexible Fuel Vehicles	Chris Wentz, Energy Minerals and Natural Resources Department, Frank Burcham, Clean Cities Coalition, Dan Apodaca, UNM
<b>October</b>	What is an ESCO?	Jack McGowan, Energy Controls Incorporated, Neal Skiver, the National City Energy Cap, Dave Flood with Alamogordo Schools.
<b>November</b>	Adding Energy Efficiency	Susie Marbury, Energy Minerals and Natural Resources Department; Julie Stephens and Brian Tumulo, Rebuild New Mexico

Date	Topic	Guests
January	The Costs and Benefits of Renewable Energy	Bill Gross, Engineering Dean Emeritus, UNM > David Hughes, President, Affordable Solar > Evelin Wheeler, Director of Planning, Strategy & Analytics, PNM
February	Kids Speak Out About Energy Conservation	Haley Barela, 7th grader, Madison Middle School Mark Rader, 8th grader, Madison Middle School Ron Rioux, Energy Conservation Coordinator for Albuquerque Public Schools

## **Exposure and Information Exchange Opportunities**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (C and E)**

The ECC recognizes the importance of education and outreach, and therefore maintains a strong presence at community events. This level of exposure is easy to accomplish because the ECC is composed of long time community leaders in the area of Energy.

**Results Summary:** The ECC is now represented at the Anderson Abruzzo Albuquerque International Balloon Museum with a Kiosk (in the “exhibit gallery” illustration below) showing the energy being generated by landfill gas. The ECC also has a presence at most of the energy related meetings, trainings, conferences and Town Halls. A few of the events attended include local chapter meetings of the New Mexico Solar Energy Association, Rebuild New Mexico, the Association of Energy Engineers, and Neighborhood Solar, just to name a few. ECC members have also participated in Sustainability Day at the Round House in Santa Fe, the Solar Fiesta as well as “Sustainability: A Town Hall on Albuquerque’s Energy Future”. The Sustainability Town Hall was one of the most exciting activities of the last year. The Mayor and City Council demonstrated tremendous courage and vision by stating that by 2015 Albuquerque will be nationally recognized as a sustainable community and then asking for help from the community to reach this goal. Expectations were very high after hearing from the NM Senators, Governor, leading Mayors, and other



experts on Sustainability. The ideas generated by approximately 200 concerned citizens from all over the southwest were fantastic. It will take some time to implement these ideas, and the ECC is looking forward to working with the city to implement these proposals.

## PROJECT DEVELOPMENT

### Alternative Transportation Success

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

The ECC is required to educate citizens, professional groups and other key persons about energy conservation and alternative transportation.

**Results Summary:** The ECC was able to implement a program and through its visibility, can educate the public on the availability of ethanol as a renewable transportation fuel. In September 2005, the Mayor of



*Expo NM State Fair Alternative Fuels Day  
September 2005*

Albuquerque accepted a General Motors 2005 E85 Avalanche. The Mayor loaned the vehicle for its first use at the Expo New Mexico State Fair Alternative Fuels Day. Approximately a dozen alternative fueled vehicles were on display, with the most visible and prominent one being Mayor Chavez's E85 Avalanche. Arranged by and coordinated through the Land of Enchantment Clean Cities Coalition, the vehicle is on a one-year loan to the Mayor for

his use throughout the community. It will serve to educate the public on the availability of ethanol as a renewable transportation fuel and to highlight the use of it in day to day operation.

### CIP Fund Accomplishments

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (A and B)**

The Capital Improvement Program (CIP) is linked to the City's adopted Five Year Goals, Program Strategies, and has an inclusive perspective of all capital expenditures regardless of the fund source. The ECC studies energy uses and losses and means of reducing energy consumption in the city.

#### **Results Summary:**

**Bio Diesel -** All city diesel vehicles, except for Solid Waste, have been converted to bio diesel fuel. This fuel is cleaner and requires less maintenance than diesel vehicles once the vehicle has been broken into

the bio diesel fuel. After more than a year of operations, this fuel has proven to be cost negative and reduce emissions in soot, CO<sub>2</sub> and SO<sub>x</sub>.

**Civic Plaza Underground Parking** - This project replaced the 175 metal halide lights with T5 and T8 fluorescent lighting in the underground parking area. This has increased the foot-candles by 50% and given the COA a savings of \$20,000 per year in electric savings. These lights provide better visibility and a safer atmosphere for public use.

**HVAC Upgrades** - Two HVAC upgrade projects, with less than a ten-year-payback, have been completed. The chiller in the main library has been upgraded with a new efficient chiller. This will save both electricity and water. Transits office building on Yale Blvd. had its single reciprocating compressor replaced with a four-scroll model compressor to reduce electric use and cost. Both of these projects will allow for a better environment for all occupants.

**Hybrid Vehicles** - The COA has purchased nine Honda Civic hybrids electric/gasoline vehicles at a cost of \$200,000. They were put in service February 2005. At present, the gas mileage has increased by 60% in comparison to a standard sedan. The hybrid is 34 mpg and the regular sedan is 21 mpg. The Security, Planning, Environment Health and Parking Departments are using these hybrid vehicles.

**Isotopes Park** - This project is to replace twenty-three compact fluorescent lamps with seven 100,000-hour induction lamps. By making this change, we achieve two benefits. One is a reduction in electricity use. The second benefit is that the city will not need to replace the new induction lamps for ten years, and the lamp replacement is costly due to the need for a scissor-lift to complete the job.

**LED Lights** - The amount allotted for this project was \$500,000 to be used for replacing green traffic signals with LEDs. As of today, 90% of all city intersection have green LED lights. The estimated savings for the city will be \$450,000 per year in electric cost. There are additional benefits with savings, in maintenance costs, in coal, water, pollution, and brighter lights which improve safety.

**Used Oil Heaters** - Four heaters that run on used motor oil have been installed at Pino Fleet Maintenance Shop, and seven others have been installed at the Solid Waste Maintenance Facility. The Solid Waste heaters have been in use for a full year and have performed well with minimum maintenance. With the cost of natural gas at an all-time high, these heaters will continue to be used in an effort to decrease the use of natural gas by the city, while at the same time saving money that was previously spent to dispose of the waste oil.

**Variable Speed Motor** - The old, inefficient motor was replaced with a new variable speed drive motor. This motor change will not only save electricity but will also operate more efficiently.



## **Clean Energy Grant Application**

### **Resolution Reference – FSR 329 Section 2 G**

In an effort to develop efficiency technology for the city, the ECC will leverage money and apply for Clean Energy Grants pursuant to the Advanced Energy Technologies Economic Development Act. During the past year the ECC, in coordination with Neighborhood Solar and Rebuild New Mexico, applied for Clean Energy Grants.

**Result Summary:** The City applied for a State of New Mexico Clean Energy Grant for implementing energy efficiency and placing solar electricity on the North Fourth Street Yard, where COA Facilities Management and Energy are located. The proposal was to research conservation and photovoltaic measures and to select the best installations. Buy-down monies were identified that would give a minimum ten-year payback. The State did not fund the project. Feedback to the contractor who developed the proposal showed the State was not willing to fund a project to explore the economics and implement hardware based on the results, but wanted hard numbers on costs, hardware proposed, and payback. This was not clear in the RFP. COA energy professionals believe in the soundness of the concept, and research is going forward. Other funding sources are being sought.

A second Clean Energy Grant which the ECC supported was a collaboration of the New Mexico Public School Facilities Authority and Rebuild New Mexico which was awarded \$66,068, to replicate the Albuquerque Public Schools' Energy Conservation program in the selected four to six school districts throughout the State. However, through this process, the ECC learned that the Public School authority was awarded \$67,000 for lighting for three schools.

## **LEED and Governor's Executive Order**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (E and H)**

After the executive order was established for Green Building Standards for City projects, the City administration worked with the ECC through this executive order to build a minimum rating of "Silver" using the US Green Building Council's LEED rating system.

**Results Summary:** The City of Albuquerque and the State of NM continue to be national leaders in the area of sustainable buildings. The Mayor of Albuquerque and the Governor of NM have both signed the Executive Order which states that all future City and State buildings will meet the US Green Building Council's Leadership in Energy and Environmental Design (LEED) SILVER standard. Buildings designed

and built to the LEED SILVER standard are energy efficient and comfortable, with excellent daylighting. The ECC will continue to work with the City to support the construction of sustainable buildings.

## **Renewable Energy Report, Rebate Program**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

The ECC plans to help New Mexico be a leader in Renewable Energy.

**Results Summary:** The work on a Rebate Program for Renewable Energy is just getting underway. Recommendations are being developed for the City and will be provided by September 2006 as required by ordinance. The approach to this item is being revised based on the very exciting recent developments from the Legislative session and Sustainability: A Town Hall on Albuquerque's Energy Future. The legislators passed, and the governor signed, a 30% tax credit for Solar Thermal and Solar Electric systems for the next ten years (up to \$9,000). This by itself will make New Mexico a leader in Renewable Energy. However, depending on which recommendations are implemented from the Town Hall on Sustainability, there could be additional support for renewables for citizens of the City. The ECC is excited about continuing to work with the city on this very worthwhile activity.

## **Solar Energy Incentive Program**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D)**

The City Office of Economic Development and the Energy Conservation Council were mandated to develop,



*The 11kW Solar Carport  
at the Indian Pueblo  
Cultural Center*

within nine months from the effective date of the Resolution, a program for providing incentives and tax credits for entities located within the city that manufacture solar energy products or that create solar energy technology. Upon approval of the program, the Council's intent is that up to \$1,000,000 will initially be appropriated to fund the program from the City's CIP Decade Plan and Clean Energy Grants. Eligible City Solar Energy participants state that incentives would be greatly helpful in addition to land development purchase tax relief. Job training

funding for positions in the renewable energy industry would also be welcome.

**Results Summary:** After much public support and an intense lobbying push by the

Coalition for Clean Affordable Energy (CCAEE) team, the solar industry and the

Administration, the Legislature passed and the Governor signed the Solar Tax Credit Bill (SB 269). The Land, Wildlife, and Clean Energy Grants (SB 407), which did not pass the last legislative session, would

provide a recurring fund to continually deploy renewable energy systems to cities, counties, municipalities, and tribes. The ECC is optimistic this bill will pass during the next session.

## **Neighborhood Solar**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

Neighborhood Solar, the City of Albuquerque’s solar energy program, has completed its second year. To date, it has been fully funded by the Million Solar Roofs Initiative of the U.S. Department of Energy. Currently, the program is surveying all City buildings, approximately 2.5 million square feet, to identify appropriate applications for six types of solar energy.

**Results Summary:** Neighborhood Solar achieved its ten-year goal of solar installations in its first year of operation. Neighborhood Solar reached its target by contracting for solar hot water and solar electricity for five large swimming facilities around the City. The first solar installations are anticipated to save the City at least \$150,000 a year in gas heating costs. Part of the innovation of this program is the funding. By using third-party financing by an Energy Services Company (ESCO), installations won’t cost taxpayers a cent, because the savings in gas bills will be used to repay the ESCO. Final contract negotiations with the winning proposer are taking place now.



*The 10kW Sol-Park provides grid-tie power to the Southwestern Indian Polytechnic Institute*



*The trophy presented at the Million Solar Roofs annual conference in Washington, DC.*

The program has received national recognition by the United States Department of Energy. An attractive trophy was presented at the Million Solar Roofs annual conference in Washington DC on October 8, 2005 to Gene Bustamante, City Energy Specialist responsible for the program, and Lynne Behnfield Thomas, Program Manager for Neighborhood Solar. The “Best Progress Awards for the Central Region” was in recognition of the City’s ambitious solar initiatives in its first year. Neighborhood Solar was also recognized for its comprehensive Ten Year Plan developed in its first year. The ECC endorsed this plan and incorporated it as a renewable

energy component. During her October visit, Margie Bates, DOE Regional manager for Million Solar Roofs, said at an Association of Energy Engineers luncheon, “I must mention the extraordinary, dedicated efforts of the Facilities Management Division under the direction of Richard Harding. The Division has diligently worked toward reaching its objectives for *Neighborhood Solar*. Specifically, I recognize Gene Bustamante, Lynne Thomas and Bill Delicate, - and a host of others who continue to make significant contributions.

These individuals have supported the Department of Energy's energy efficiency and renewable energy programs for some time, and continue to implement energy conservation for the City of Albuquerque. You all are an enthusiastic, ambitious, energetic, and tireless group, determined to make things happen in your community. On behalf of the Department of Energy, Million Solar Roofs Initiative, I must extend my sincere gratitude."

Progress Report, January 2006

Summary of Six Objectives

1. Meet or exceed the 500 solar roofs commitment with appropriate performance criteria for project evaluation (equivalencies)
2. Promote the City of Albuquerque as the "Solar City"
3. Implement an education strategy for residents, businesses, voters, financial industry, realtors, appraisers that links efficiency, behaviour and solar improvements
4. Emphasize economic development during implementation of the COA Million Solar Roofs Program
5. Create finance vehicles to sustain the City of Albuquerque Solar City (e.g. NM state bond, Albuquerque bond like San Francisco Bond)
6. Establish benchmarks of solar gains to date and future opportunities by:
  - preparing an inventory of ABQ area buildings to identify solar projects already established
  - assessing all COA building stock for solar appropriateness inventorying ABQ area buildings to identify solar projects already established

## **POLICY DEVELOPMENT**

### **IRB Scoring Update**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (F)**

The intent of the ordinance is for the ECC to make recommendations to change the scoring criteria to give added points for creating, producing or using renewable energy or technology.

**Results Summary:** The Industrial Review Bond Scoring Update recommendations are in the very early stages of development. The ECC is on schedule to provide high quality recommendations by September 2006.

### **Legislation – F/S R-05-329**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (F)**

Councilor Eric Griego sponsored a Resolution adopting policies to establish and implement a city renewable energy initiative. Councilor Griego met with ECC members who provided input on making it a more comprehensive resolution. The resolution was voted on September 19, 2005 and was passed and signed by the Mayor's Office on September 28, 2005. This very aggressive resolution will result in progress reports, recommendations and support by city departments and the ECC. The entire resolution can be viewed on the ECC webpage or the COA City Council page at <http://www.cabq.gov/council/legportal.html>.

**Results Summary:** From the FSR-329 Resolution, the ECC has developed a matrix of all deliverables and their time frames. On this matrix are noted ECC members who volunteered to take on specific tasks. These members are responsible for making reports, recommendations or studies that are a part of this new energy initiative. See appendix for more details.

### **Standards – New Residential Development**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

The ECC is called to help develop new standards or incentives for energy efficiency in new residential developments over a nine month timeframe. The ECC is on schedule to provide high quality recommendations by September 2006. Energy efficient design and construction can substantially reduce costs and pollution because nonrenewable energy sources of energy are expensive, potentially unstable, and create toxic wastes through their development and combustion. The long-term costs of energy to the homeowner are large, in dollars as well as in health and safety. The generation and use of energy is the

single largest contributor to air pollution. Each year the average house releases more than twice as much greenhouse gas as the typical car.

**Results Summary:** For the reasons listed above and more, the ECC encourages the building of energy efficient homes. This concept offers contractors advantages in the marketplace. The reputation of builders with satisfied customers passes among homeowners and potential buyers. Greater customer satisfaction will result from less noise, increased durability, and comfort, reduced maintenance and operating costs, and the reduced reliance on pollution causing energy consumption. Energy-efficient homes and those with renewable energy systems qualify homeowners for resource efficient mortgages, and incentives for renewable energy technologies. The more skilled a builder is at conveying these advantages to their homebuyers, the more profitable the builder will be. Energy efficiency is one of the most direct ways a homeowner can realize the benefits of an Energy Star rated home. By implementing energy efficient techniques, energy bill savings can reach 65%. Energy-efficiency can also improve the comfort, health, and safety of home occupants through improved indoor air quality, fire protection, noise levels, reduced maintenance, and increased durability. One rating program that deserves special mention is the Energy Star home labeling program. Energy Star standards are nationally recognized and commonly adopted as criteria for other incentive programs.

## **STRATEGIC PLANNING**

### **1% Project Status/Environmental Impact Sheet**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (G)**

Building on a tool that was created at the beginning of 2004, an accounting spreadsheet has been used to track and report the CIP 1% funding projects. The project manager is listed along with the dollars allocated and the dollars spent to date. It includes the annual dollars saved and the basic environmental benefits of the capital projects. Pollution avoidance per year is also included. The payback in years is given as well as the justification and the status of each project.

**Results Summary:** This spreadsheet measurement tool was revised monthly, distributed and discussed at monthly ECC meetings. The ECC has continued to monitor and provide status on the cost and benefits of each funded project. In addition to the actual value of the energy savings generated, the ECC continues to track the direct environmental benefits achieved through the implementation of each energy conservation measure. The public can view this “Energy Funds Impact Sheet” on the ECC website under the Energy Funds Summary sections.

### **Energy Efficiency Upgrades**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (F and G)**

The ECC will evaluate the 1% for Energy Bond Program and make recommendations for extending program beyond the 2007 bond cycle.

**Results Summary:** This work is essentially complete. The ECC has worked with the City to develop draft language to improve the current 1% for energy ordinance. The ordinance had a limited life and needed to be updated for future years as well as incorporate lessons learned over the last few years. The nature of the recommendations included an extension of the ordinance as well as the recommendation that some of the funds be used to support the mandate to educate the local community on Energy Efficiency as well as what is being accomplished with the 1% of the Construction Improvement Programs being set aside for energy efficiency. The draft language developed by the City and the ECC has been submitted to the Mayor and City Council.

## **Green Certificates for Renewable Energy**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

The recommendation that the city gather, certify, and sell Renewable Energy Credits (REC) has been raised several times with different City Organizations. If done correctly, it has the potential to generate addition income for the city. The REC could be sold in NM to help investor owned utilities meet the requirements the NM Renewable Portfolio Standard (RPS) or if more profitable, they could be sold on the national market.

**Results Summary:** This idea was raised again at the “Sustainability: A Town Hall on Albuquerque’s Energy Future.” If effectively implemented, it has the potential to generate revenue for the city that could be used for additional energy efficiency projects as well as create the image of a Sustainable City that the Mayor and City Council are working hard to develop.

## **Natural Design Energy Management Plan**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (A)**

The council looks forward to developing guidelines to incorporate natural landscape and energy conservation into the Natural Design Energy Management Plan. It will take many resource personnel to help accomplish the process of developing landscape design guidelines and a program to disseminate guidelines that promote natural plants and materials to enhance energy conservation.

**Results Summary:** Potential partners have been identified, and they are: Albuquerque Parks and Recreation, Environmental Health and Planning Departments, UC Davis Urban Forestry Research Center, Public Service Company of New Mexico, local landscape architects and tree specialists, and private consultants. Scheduled completion of this process is September of 2006.

## **On-Site Power Generation**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (B)**

The recently passed R-05-329 “Adopting Policies to Establish and Implement a City Renewable Energy Initiative” requires 15% of a building power to be from renewable energy. Of this 15%, 33% of it (5% of total power) should be generated from on-site renewable energy.

**Results Summary:** This is an aggressive, but achievable goal. The use of on-site generated renewable energy will support the recently signed executive order for all new City buildings meet the US Green Building Councils Leadership in Energy and Environmental Design (LEED) Silver rating. The use of on-site generated renewable energy will facilitate the successful achievement of a Silver, or better, rating. This goal of on-site renewable energy could be further facilitated if the recommendation that “1% of the Capital



Improvements Program (CIP) be set aside for Renewable Energy” is implemented. This excellent idea was generated at the “Sustainability: A Town Hall on Albuquerque’s Energy Future.” The ECC will be working with the city during the next year to develop recommendations to meet this challenging goal.

## **Renewable Fleet Fuels**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D), FS-R-329**

Council Bill FS-R-329 adopted policies to establish and implement a city renewable energy initiative which led to the Energy and Fuel Conservation Action Plan developed in November 2005. Included in the Resolution was Section F: Renewable Fleet Fuels. The section states that the City fleet shall be fueled with a minimum of 20% non-petroleum based fuels within 5 years.

**Results Summary:** The ECC was involved in the City's renewable fleet fuel efforts to educate both the Mayor and the Council on the impact of alternative fuels on the community. Due to these efforts, the City has increased the number of Alternative Fuel Vehicles in their inventory and the City Council Resolution mandating the use of alternative fuels has gone into affect. In regard to gasoline and diesel fuel conservation measures, several mandates were put forth:

- Fleet management will be requested to evaluate the assignment of each of the Department’s currently owned fuel efficient vehicles, hybrid vehicles, and alternative fuel vehicles so that they are effectively assigned to the appropriate staff who drive the most mileage.
- Budget and Fleet Services will be requested to review the specifications of vehicles to be purchased during the year to ensure that fuel efficiency is a primary objective.
- A Department-Wide No-Idling Policy. Vehicles will be turned off and not idled during administrative stops, report writing, and other city business. Vehicles should not be warmed up in the morning longer than 30 seconds.

As a result, two ECC members have been asked to serve on the Mayor’s task force to assist the City in their alternative fuel efforts through the Land of Enchantment Clean Cities Coalition and the Alternative Fuels Vehicle Network. Most recently, the Mayor has announced that newly purchased city fleet will be 100% alternative fuels.

## STUDIES

### **Energy Savings Performance Potential**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (D)**

The EEDS Group has the challenge to develop means by which COA buildings will operate at less than or equal to 90% of the NM Building Code standards. This must be demonstrated by September 2007. The following individuals have agreed to participate in identifying processes by which the energy efficiency objectives can be met or exceeded: The ECC-EEDS group will consist of a partnership including the State of New Mexico, Neighborhood Solar, City of Albuquerque, and UNM. An ECC member will lead this group.

**Results Summary:** The group has had two telephone conference meetings and identified factors that need to be considered. They are continuing to discuss the following factors. The challenge requires collecting baseline energy consumption data for each of the 141 COA buildings to identify feasible energy saving changes that can be made for each. Then, determining cost-effectiveness of each possible change, the City can choose those which promise to give the most energy savings in both first cost and life cycle cost including any maintenance changes required. Therefore, rather than achieving the same percentage savings for each building, the City should choose what and where the most savings can be made so that the total COA energy consumption savings exceed the 10% objective. In addition to internal device and system efficiencies, feasible passive and active heating and cooling possibilities as well as building PV generated electricity need to be considered. Proposed new building designs will be programmed to minimize energy consumption to the extent possible, hopefully significantly exceeding that implicit in the NM Building Code as it is upgraded. Performance contracting needs to be considered for existing and projected buildings. In addition to individual building savings, cost-effective COA systems need to be considered that reduce overall COA energy consumption. For example, if cost-effective, the City may generate electricity by burning used engine oil, shredded cardboard and methane from landfills for steam to drive generators.

### **Landfill Gas**

#### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (A)**

The City uses the electricity generated by a 70 Kilowatt microturbine, which can convert approximately 30 cfm of landfill gas into electricity, to power the landfill gas extraction system, and a groundwater remediation system at the landfill. The excess power produced by the microturbine is fed into the PNM grid. Permanent start up of the microturbine occurred in late February, 2006.

**Results Summary:** The ECC will be looking into possible future uses for the power generated by the microturbine. For example, it is possible to supply electricity to RVs during Balloon Fiesta and other special events held at the landfill. During December, January and the first week of February 2006, while the microturbine was running intermittently, the turbine produced approximately 16,169 kWh. Of this amount, 4196 kWh were sent to the PNM grid and the remainder was utilized at the site by the landfill gas extraction and groundwater systems. The ECC maintains a Kiosk at the Anderson Abruzzo Albuquerque International Balloon Museum showing the energy being generated by landfill gas.

## **Renewable Fleet**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (A)**

In Fall of 2005, Mayor Chavez created an Albuquerque Climate Action Plan Kyoto Committee. Its purpose is to address the issue of green house gas emissions in the community and to study and document the source of stationary and mobile emissions. In line with the 73<sup>rd</sup> Annual US Conference of Mayors and their Climate Protection Agreement, the study will enact policies and programs to meet or beat the target of reducing global warming pollution levels to 7 percent below 1990 levels by 2012, including efforts to reduce the United States' dependence on fossil fuels and accelerate the development of clean, economical energy resources and fuel efficient technologies.

**Results Summary:** ECC and its members are acting as a resource for unbiased information regarding the ordinance and the increased use of alternative fuels in the community. Frank Burcham will personally assist the City in their alternative fuel efforts through his two companies. The result will be an expansion of the alternative fuel infrastructure in Albuquerque.

## **Solar Applications Survey**

### **Ordinance Reference – FSO 02-70 Section 4 Chapter 14-8-5-4 (A)**



*Most fire station facilities have available roof area for PV or thermal collectors especially over the high-bay garage areas.*

An aggressive, well-planned solar implementation plan will showcase the City as a model for successful integration of appropriate sustainable technology. This structured plan will also help avoid the pitfalls which were experienced decades ago with solar energy technology. The City of Albuquerque's City Council Resolution R-05-329 requires that new City buildings will have 15% of their power from onsite renewable energy within seven years. "The development

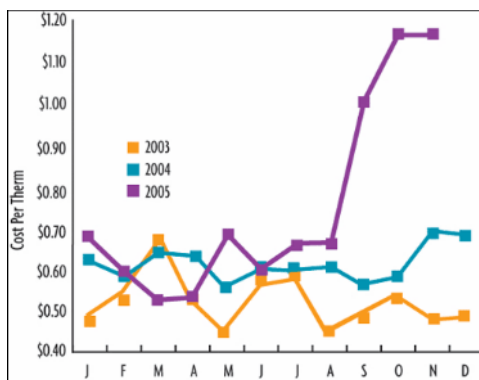
and use of renewable energy sources and investments in energy efficiency will enhance energy productivity and security; offer clean, reliable and affordable energy technologies; and increase choices available to Albuquerque's residents."

**Results Summary:** The ECC has accepted the goals of the neighborhood solar program's 10-year plan. The result of the Solar Applications Survey was a report which included the quantification of approximate paybacks and also identification of barriers, which will be used in the final selection process. The solar energy systems considered were:

- Solar Thermal Air – for interior comfort space heating.
- Solar Thermal Water – two types, for domestic or process hot water heating.
- Solar Electric – using photovoltaic (PV) utility grid connected systems.

119 facilities were initially included in the Solar Survey, and the final list of 103 facilities actually surveyed represent an estimated total 2.18 million square feet of building area. Survey results indicate that 59 facilities, or 57% of the facilities surveyed can use at least one of the types of solar retrofits proposed. Of those, 24 facilities, or 23% of the total, can use either two or three of the solar retrofits proposed. The summation of all 59 of the proposed solar projects' estimated savings is 13,943 Therms per year of natural gas, and 208.8 MWh per year of electricity, for an annual combined dollar savings of \$68,858.00. The combined payback period is 12.1 years, assuming that the project is awarded state, federal or municipal

grants.



*PNM Cost of Natural Gas History*

A compact disk of the results was provided. It contains completed survey forms for each facility, photos taken at the facilities and aerial views, the software input and output, sensitivity analysis along with the calculated loads, performance and financial estimates. It also includes articles about expected future developments in solar energy markets and technology.

## **APPENDICES**

CITY of ALBUQUERQUE  
FIFTEENTH COUNCIL

COUNCIL BILL NO. FSO-02-70 ENACTMENT NO. \_\_\_\_\_

SPONSORED BY: Greg Payne

ORDINANCE

..t

F/S Amending ROA to Reserve 1% of the General Fund Capital Implementation Program for Energy Conservation Projects to be Selected by the Energy Conservation Council and Approved by the Capital Implementation Program Selection Committee (Payne)

..b

AMENDING SECTION 2-12-12 TO RESERVE 1% OF THE GENERAL FUND CAPITAL IMPLEMENTATION PROGRAM FOR ENERGY CONSERVATION PROJECTS ESTABLISHING CRITERIA FOR SELECTION OF ENERGY CONSERVATION PROJECTS AND AMENDING SECTIONS 14-8-5-1, 14-8-5-2, 14-8-5-3 AND 14-8-5-4 EXPANDING THE POWERS AND DUTIES OF THE ENERGY CONSERVATION COUNCIL TO INCLUDE REDUCING ENERGY CONSUMPTION IN CITY GOVERNMENT AND PREPARING IN COOPERATION WITH THE MAYOR AN ANNUAL ENERGY USE REPORT.

BE IT ORDAINED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

SECTION 1. FINDINGS.

The Council finds that:

(A) In Fiscal Years 2001 and 2002 energy costs comprised an average 27.5 million dollars of the total city budget including the enterprise and general funds.

(B) In recent years a pattern of slow growth has affected city revenues, requiring greater efficiency in City operations.

(C) The City's ability to construct capital facilities exceeds the ability of the general fund to provide funding to maintain and staff such facilities.

(D) The General Fund Operating Budget is sustained by Gross Receipts Tax and in recent years this tax was removed from prescriptions and the incoming administration of Governor Elect Richardson intends to remove the sales tax from food sales.

(E) The city should be a model of energy conservation to protect the environment.

(F) The cost to install Energy Conservation measures is regained in a 5 to 10 year period through the savings in energy purchases generated by the measures. After the cost is regained the savings help to produce positive fund balances for the general fund that can improve maintenance and staffing at capital facilities and help the City to overcome future challenges presented by diminishing sources of Gross Receipts Revenues and pressing needs for planned expansions in Enterprise Fund Departments.

(G) Section 14-8-5-1 of the Albuquerque City Code recognizes that energy conservation in residential, commercial, industrial, transportation uses and utility generation is an important community goal. It is the intent of §§ 14-8-5-1 et seq. to serve the public welfare by developing and implementing a community-wide effort to conserve energy. The city's role is to provide a mechanism for community leadership in reduction of energy consumption, to facilitate public involvement in energy conservation, and to increase the effectiveness of programs carried on by other entities.

(H) Policy 3-D of the Albuquerque Bernalillo County Comprehensive Plan declares that, "Public and private planning decisions should promote energy management and efficient use of energy-related resources to ensure the community is served with a balanced mix of affordable energy supplies.

(I) Section 14-8-5-2 of the Albuquerque City Code creates the Energy Conservation Council, consisting of nine members who have responsibility for effecting energy conservation programs within the residential, commercial, industrial, transportation, and utilities sectors of the community or who have leadership roles within the community. No member shall represent a specific agency or organization, but rather the community at large. All members shall be appointed by the Mayor with the advice and consent of the Council.

SECTION 1. Section 2-12-12 CAPITAL IMPROVEMENTS PROGRAM INTENT; SCOPE is amended to read.

(A) The Capital Improvement Program (CIP) plan shall include, and take as a starting point, an inclusive perspective of all capital expenditures regardless of fund source (including, but not limited to City, State, Federal funds, and private contributions-in-aid) including those expended by the City directly and those undertaken by other public agencies within the city limits that are related to the City's adopted goals. The City-funded public purposes capital improvements shall be considered as a component of this over-all perspective.

(B) The Capital Improvement Program shall be linked to the City's adopted Five Year Goals, Program Strategies, and to the Performance Plan of city departments.

(C) The Capital Improvement Program shall be consistent with and carry out the policies contained in the City/County Comprehensive Plan.

(D) The first priority of the City's Capital Improvement Program shall be to rehabilitate, replace, and maintain in good condition the capital assets of the City. Pursuant to this priority, facility plans shall be developed and maintained by all City departments, coordinated according to a common set of standards by the CIP office. These plans shall include the condition of the City's major capital assets and a program of necessary annual capital expenditures to restore, replace, and maintain the facilities, vehicles and equipment in good condition. These inventories and plans shall be completed by the 2003 CIP. The plan for water, wastewater, streets, and hydrology shall be based on the Planned Growth Strategy findings.

(E) City-funded public-purpose capital improvements are undertaken in order to implement the city's adopted goals and objectives: normally, these have been adopted in city plans for urban development and conservation. In order to maximize the effectiveness of capital improvements in advancing such goals and objectives in a coordinated manner, and in order to efficiently use public funds, the Mayor shall develop and submit to the Council a proposed Capital Improvements Program, which shall include all city-funded public-purpose capital projects proposed to be built within ten years. The program shall include but is not limited to all projects financed by general obligation bonds, revenue bonds, Urban Enhancement Fund monies, Tax Increment Fund monies, Consolidated Plan monies, tax and rate revenues, Federal and State grants, metropolitan redevelopment bonds and special assessment districts. Projects built with industrial development bonds are not normally included.

(F) The proposed Capital Improvements Program shall consist of a ten-year plan of capital expenditures, including a more detailed two-year Capital Improvements Budget. The proposed Capital Improvements Program shall include a listing of projects in order of priority and proposed year of construction or acquisition. Data on each project shall include:

- (1) The anticipated capital cost of each project;
- (2) The anticipated source of capital funds for each project;
- (3) The estimated annual operating cost or savings for each project;
- (4) The estimated completion date of each project;
- (5) The adopted plan or policy, if any, which each project would help to implement;
- (6) The viable alternatives that were considered for each project and the reasons the proposed project is the most cost-effective and practical alternative for meeting the stated objective;



- (7) The project's ranking in whatever sequencing/priority-setting system is used as a basis for proposed programming; and
- (8) The impacts of proposed capital improvements on user rates (for enterprise fund projects); and
- (9) The percentage allocations of each project as "growth", "rehabilitation", "deficiency", and "mandate", which categories are defined in Bill No. F/S R-37 (Enactment 118-2000), establishing priorities for the 2001 Capital Improvement Plan; and
- (10) The capital projects of the enterprise funds shall be evaluated by the Capital Improvements Program staff in a similar manner as those for the General Fund.
- (G) All assets included in projects to be funded in part or in total from proceeds of general obligation bond issues or revenue bond issues shall have a minimum service life expectancy at least equal to the term of the relevant bond issue.
- (H) All CIP project items with a two year programmed amount in the General Fund and a one year programmed amount in the Enterprise Funds of \$100,000 or more shall be included in the CIP bill as a separate line item.
- (I) Separate bond issues shall be sold to fund vehicles and equipment, the term of which bonds shall not exceed five years.
- "[(J) One percent of the CIP for the general fund in the 2003, 2005 and 2007 bond elections shall be reserved to fund the purchase of energy conservation equipment and building materials used to reduce energy costs for General Fund Programs that will demonstrably reduce energy consumption. This fund shall be known as the 1% for Energy Conservation Set-A-Side for Capital Improvements. The Planning for the fund shall be consistent with the requirements established in Paragraph D of this Section.
- (K) The Department of Finance and Administrative Services will budget 1% of the General Obligation Bond Program for the Energy Conservation Set-A-Side for Capital Improvements.
- (L) Departmental applications for the 1% for Energy Conservation Set-A- Side for Capital Improvements shall be submitted to the Facility, Energy & Security Management Division. The Division Manager shall appoint a committee of staff technical experts who will approve the savings. The Manager for the Facility, Energy & Security Management Division shall chair the committee. The Committee shall establish criteria to select the projects that include but are not limited to: 1) the capital expenses of a project should be regained from energy savings generated from the project within 10 years, using the average cost per unit for a energy resource(s). The cost per unit will be derived by averaging the cost for the energy source(s) that will be conserved, over the previous three fiscal years prior to the submission of the application. 2) If a proposal is for construction or installation the scope of the project shall only be for energy conservation. 3) The

monetary amount distributed to any one project shall not exceed 40% of the funding available in the 1% Energy Conservation Set-A-Side. 4) The project shall be consistent with the requirements set forth in Paragraph D of this Section. +]"

Section 2: Chapter 14-8-5-1 "INTENT" for the Energy Conservation Council shall be amended to read. The city hereby recognizes that energy conservation in residential, commercial, industrial, transportation uses "[+,city government+]" and utility generation is an important community goal. It is the intent of §§ 14-8-5-1 et seq. to serve the public welfare by developing and implementing a community-wide effort to conserve energy. The city's role is to provide a mechanism for community leadership in reduction of energy consumption, to facilitate public involvement in energy conservation, and to increase the effectiveness of programs carried on by other entities.

Section 3: Chapter 14-8-5-2 "ENERGY CONSERVATION COUNCIL" is amended to read.

(A) There is hereby created the Energy Conservation Council, which shall consist of nine members who have responsibility for effecting energy conservation programs within the residential, commercial, industrial, "[+,city government, energy conservation interest groups+]" transportation, and utilities sectors of the community or who have leadership roles within the community. No member shall represent a specific agency or organization, but rather the community at large. All members shall be appointed by the Mayor with the advice and consent of the Council.

(B) The term of each Energy Conservation Council member shall be three years; of the members first named three shall have terms ending April 30, 1981, three shall have terms ending April 30, 1982 and three shall have terms ending April 30, 1983. The Mayor shall determine which members shall have which terms.

Section 4: Chapter 14-8-5-4, "POWERS AND DUTIES" for the Energy Conservation Council shall be amended to read.

- (A) Study energy uses and losses and means of reducing energy consumption in the city;
- (B) Establish energy saving goals and a community wide energy conservation program for the city;
- (C) Work with citizens, "[+,city employees,+]" organized groups and businesses to develop and implement energy conservation programs;
- (D) Educate citizens, "[+,city employees,+]" professional groups, the business community, builders, educators, elected officials, community organizations, and other key persons about energy conservation;
- (E) Promote cooperation and encourage coordination between the city and other entities which are involved in energy conservation;
- (F) Advise the Mayor and Council on legislation, programs and policies which would contribute to energy conservation;

- (G) Provide for evaluation of energy conservation programs which have been implemented;
- (H) Adopt and promulgate such rules and regulations as may be necessary to implement §§ 14-8-5-1 et seq.;
- (I) Form such committees as are necessary to carry out the Energy Conservation Council's assigned powers and duties from its membership and from the general public;
- (J) Submit an annual written report on its activities and an evaluation of the effectiveness of §§ 14-8-5-1 et seq. to the Mayor and Council;

"[(K). April 1st of each calendar year the Mayor and the Energy Conservation Council shall communicate to the City Council for Receipt an Energy Use Report for all City Programs including the enterprise fund and the general fund. The plan shall include: 1) a ledger itemizing for the last 3 years, at the department division level, the energy consumed by type of energy source and the purpose for which it was consumed, 2) a report of the reasons by department division level for increases or declines in the consumption of a particular source of energy and 3) a list, by department division level of opportunities for energy conservation and the cost to implement those energy conservation strategies (K) (L)+]" Perform all other duties delegated to it by the Mayor and the Council.

**SECTION 4. SEVERABILITY CLAUSE.** If any section, paragraph, sentence, clause, word or phrase of this ordinance is for any reason held to be invalid or unenforceable by any court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this ordinance. The Council hereby declares that it would have passed this ordinance and each section, paragraph, sentence, clause, word or phrase thereof irrespective of any provision being declared unconstitutional or otherwise invalid.

**SECTION 5 COMPILATION.** Sections 2 and 3 of this ordinance shall be incorporated in and made part of the Revised Ordinances of Albuquerque, New Mexico, 1994.

**SECTION 6. EFFECTIVE DATE.** This ordinance shall take effect five days after publication by title and general summary.

t

## **CITY of ALBUQUERQUE SIXTEENTH COUNCIL**

COUNCIL BILL NO. F/S R-05-329 ENACTMENT NO. \_\_\_\_\_

SPONSORED BY: **ERIC GRIEGO**

**F/S Adopting Policies to Establish and Implement a City Renewable Energy Initiative;  
Calling for**

**Progress Reports by City Departments (Griego)**

b

## **CITY of ALBUQUERQUE SIXTEENTH COUNCIL**

COUNCIL BILL NO. F/S R-05-329 ENACTMENT NO. \_\_\_\_\_

SPONSORED BY: **ERIC GRIEGO**

**ADOPTING POLICIES TO ESTABLISH AND IMPLEMENT A CITY RENEWABLE  
ENERGY INITIATIVE; CALLING FOR PROGRESS REPORTS BY CITY  
DEPARTMENTS AND THE ENERGY CONSERVATION COUNCIL.**

**WHEREAS, the development and use of renewable energy sources and  
investments in energy efficiency will enhance energy productivity and  
security; offer clean, reliable and affordable energy technologies; and increase  
choices available to Albuquerque's residents; and**

**WHEREAS, the City should participate with the State in advancing the  
development of hydrogen, fuel cell, renewable energy and energy efficiency  
technologies to protect the public health of its citizens and its economic future  
and energy stability; and**

**WHEREAS, the Legislature has found that New Mexico is ideally positioned  
to stimulate advanced energy technology economic development due in part to  
its abundance of natural and renewable energy sources, the presence of  
national laboratories and research universities that are leaders in energy  
research; and**

**WHEREAS, the State is providing funds to stimulate the market for and  
promote the statewide use of advanced energy technologies; and**

**WHEREAS, the City has initiated a number of energy initiatives including,  
using methane gas generated at the liquid waste plant to provide electricity to  
the plant, designing buildings for energy conservation, converting traffic  
warning signals to photovoltaic cells, using LED traffic signals, and blending  
conventional fuels with biomass related alternative fuels, setting aside 1% of  
the CIP for the purposes of energy conservation, designing a LEED certified  
Police Substation, the New Mexico Chapter of the United States Green Building  
Council to sponsor the State's first LEED Training Program, and beginning  
planning and engineering to use methane gas from closed land fields and to  
acquire digester technology to convert a portion of the City's current solid  
waste stream into electricity; and**

**WHEREAS, 14-8-5-4 ROA 1994 of the City Code of Ordinance authorizes the  
Energy Conservation Council to study energy use and loss and methods of  
reducing consumption, work with businesses, citizens, city employees,**

community organizations, educators and elected officials, to develop and implement energy conservation goals, programs and educational efforts and promote cooperation and coordination amongst these groups and provide for evaluation of energy conservation programs which have been implemented; and

WHEREAS, 14-8-5-4 ROA 1994 Paragraph (F) states that Energy Conservation Council shall advise the Mayor and Council on legislation, programs and policies which would contribute to energy conservation; and WHEREAS, the City of Albuquerque should continue and expand upon these efforts and adopt a renewable energy policy that offers incentives and rebates to developers and users of renewable energy and that demonstrates to public and private entities how to build new or retrofit existing facilities with the technologies to use renewable energy.

**BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:**

**Section 1. Renewable Energy - Any energy resource that is naturally regenerated over a short time scale and is:**

**A. Generated by use of low- or zero-emissions generation technology with substantial long-term production potential; and**

**B. Generated by use of renewable energy resources that may include:**

**(1) Solar, wind, hydropower and geothermal resources;**

**(2) Fuel cells that are not fossil fueled; and**

**(3) Biomass resources, such as agriculture or animal waste, small diameter timber, salt cedar and other phreatophyte or woody vegetation removed from river basins or watersheds in New Mexico, landfill gas and anaerobically digested waste biomass; but**

**C. Does not include electric energy generated by use of fossil fuel, waste products from fossil sources, waste products from inorganic sources or nuclear energy.**

**Section 2. A renewable energy policy is hereby adopted for the City and shall include the following elements:**

**A. Solar Energy Incentives. The City Office of Economic Development and the Energy Conservation Council shall develop within 9 months from the effective date of this Resolution a program for providing incentives and tax credits for entities located within the city that manufacture solar energy products or that create solar energy technology. Upon approval of the program, the Council's intent is that up to \$1,000,000 will initially be appropriated to fund the program from the City's CIP Decade Plan and clean energy grants.**

**B. City-Owned and Constructed Buildings. The City Department of Municipal Development, in consultation with the Energy Conservation Council, shall equip or retrofit all City-owned buildings and develop energy procurement policies to achieve the goal of securing 15% of the power for Cityowned facilities from renewable sources, solar energy, in particular, within 7 years from the effective date of this Resolution. A minimum of 33% of the power acquired from renewable sources shall come from on-site renewable energy. The on-site power generation may be funded through third party**

financing, City funds, Federal and State Grants and sources as available.

C. New City-Owned and Constructed Buildings and Additions over 50,000 Square Feet. All new buildings and additions built for or by the City that are over 50,000 square feet shall have 15% of the power to the building generated by on-site renewable energy.

D. Energy Efficiency Upgrades. The Department of Municipal Development and the Energy Conservation Council, shall report back within 6 months of the enactment of this legislation on the progress of the 1% for Energy Conservation bond program, and make recommendations to extend the program beyond the 2007 bond cycle and for expansion of the program to increase energy efficiency and add investment in renewable technologies, pursuant to subsection B of this Section.

E. Energy Efficient Design Standards for City Owned Buildings.

The Department of Municipal Development in consultation with the Energy Conservation Council shall within 2 years of the effective date of this Resolution adopt energy efficient design standards for new City buildings, additions to City buildings and remodels of City buildings that reduce energy consumption 10% below that required by the State Building Code.

F. Renewable Fleet Fuels. The City fleet shall be fueled with a minimum of 20% non-petroleum based fuels within 5 years.

G. Rebate Program. The City, through the Finance Department, the Municipal Development Department and the Energy Conservation Council, shall develop a rebate program, similar to that of the City's water conservation program, to encourage the use of renewable energy, including solar panels, by city residents. The report to Council should identify funding sources.

H. Natural Design Energy Management. The City Department of Environmental Health, Parks and Recreation Department and the Planning Department shall within 12 months of the effective date of this resolution, develop landscape design guidelines, and a program to disseminate these guidelines, that promote the use of natural plants and material to enhance energy conservation and quality of life.

I. The Energy Conservation Council, by March 30, 2006, shall submit to the Administration and to the City Council a 5 year education plan that includes a budget component, to fulfill the education mandate set forth in 14-8-5-4 ROA 1994.

J. IRB Scoring for Renewable Energy and Demand Side Supply via Energy Efficiency. The City shall amend the scoring criteria for approving Industrial Revenue Bond applications to provide added points for creating, producing or using renewable energy and renewable energy technology.

K. Development Standards and Incentives. The City, Planning Department and the Energy Conservation Council in cooperation with the New Mexico Chapter of the United States Green Building Council and Rebuild New Mexico shall propose to the Council within 9 months of the enactment of this legislation revised development standards or incentives for new residential developments based on energy efficiency.

L. Application for State Funds. The City, through the Department of Municipal Development and the Energy Conservation Council, shall apply for a "Clean Energy Grant" pursuant to the Advanced Energy Technologies

**Economic Development Act, Sections 71-7-1 et seq. NMSA 1978, to obtain funding to develop efficiency technology for the City.**

**M. Purchase of Environmentally Safe Products. The City, through the Department of Finance and Administration, in consultation with the Energy Conservation Council shall propose to the Council within one year of the enactment date of this Resolution amendments to the Purchasing Ordinance which develop specifications for City purchases that reduce exposure of city residents and visitors to potentially toxic chemicals, reduce greenhouse gas emissions and other air pollutants, protect the ground and surface waters, maximize water and energy efficiency, favor renewable energy sources, maximize post consumer recycled content and readily recyclable or compostable materials, favor long-term use through product durability, repairability, and reuse, and consider life cycle economics of a product including its manufacture, transportation, use and disposal.**

**N. Net Metering. The City, as part of its legislative priorities for the 2006 state legislature, shall lobby for adoption of the Public Regulation Commission's net-metering measure that will provide the City with opportunities to sell back to utility companies any excess renewable energy and renewable energy credits produced by installations on City-owned facilities.**

**Section 3. The Administration and the Energy Conservation Council in the development of the policies and programs established in this Resolution shall consult with, and when possible, include the participation of, other interested parties.**

**Section 4. The Administration shall provide a report to the Council within 6 months of the effective date of this Resolution regarding the status of the development of the policies and programs set forth herein and shall continue to provide reports every 6 months until the policies and programs set forth in this Resolution are implemented.**

**X:\SHARE\Legislation\Sixteen\R-329fsfin.doc**

SENATE MEMORIAL 5

47TH LEGISLATURE - STATE OF NEW MEXICO - SECOND SESSION, 2006

INTRODUCED BY

Joseph J. Carraro

A MEMORIAL

REQUESTING THAT THE GOVERNOR ISSUE AN EXECUTIVE ORDER THAT REQUIRES CERTAIN ENERGY CONSERVATION MEASURES TO BE IMPLEMENTED IN ALL STATE GOVERNMENT BUILDINGS.

WHEREAS, the efficient use of energy is of prime importance to the energy supply and the economic well-being of the state of New Mexico; and

WHEREAS, state buildings use a considerable portion of the state's energy supply;

NOW, THEREFORE, BE IT RESOLVED BY THE SENATE OF THE STATE OF NEW MEXICO that the governor be requested to issue an executive order that requires the following energy conservation measures to be implemented in all state government buildings:

A. all personal computer systems shall be turned off when not in use for more than two hours, including evening and weekend hours. During working hours, all screen savers shall be disabled and energy-saving power-down features shall be enabled;



B. the temperature in all state buildings shall be set between seventy-four and seventy-eight degrees during the summer months and between sixty-eight and seventy degrees during the winter months;

C. lights in office areas shall be turned off during evening and weekend hours;

D. exterior lighting shall be turned off during daylight hours and between midnight and 5:00 a.m. Necessary security and safety lighting shall remain lit as required;

E. all main heating, ventilation and air conditioning systems shall be examined for efficient operation. Setback times shall be reevaluated and adjusted to the absolute minimum time required to heat and cool buildings to prepare for operations. All filter-changing procedures should be evaluated to determine if filters need to be changed more frequently to achieve more efficient operation of the systems;

F. the use of personal heating appliances shall be limited to energy-efficient heated mats or other high-efficiency heaters;

G. all hot water heaters shall be set to one hundred forty degrees. Facilities that require a higher hot water temperature to meet code requirements are not required to comply with this requirement;

H. all hot water circulation loops shall be examined to determine their necessity;

I. office equipment shall be turned off during nonworking hours;

J. lights located in storage areas shall be turned on only when the storage areas are in active use;

K. the heating, ventilation and air conditioning systems shall not be operated for small groups of employees;

L. all exterior surfaces of buildings shall be evaluated for thermal efficiency. Insulation, window gaskets and seals shall be replaced as necessary;

M. off-hours security and janitorial crews shall be instructed to turn off lights as work is completed in office areas; and

N. all vending machines shall have their lights turned off and any redundant vending machines shall be removed; and

BE IT FURTHER RESOLVED that a copy of this memorial be transmitted to the governor.

- 3 -



**ALBUQUERQUE PUBLIC SCHOOLS**

Office of the Superintendent

*Expect Great Things!*

M. Elizabeth Everitt, Ph.D.  
SUPERINTENDENT

Albuquerque Public Schools  
**Energy Management Program 2005-2006**  
Superintendent's Letter

Dear Principals,

Prudent stewardship of the resources entrusted to us must include energy. Preventing energy waste is not only good for our budget, it is also important to our environment. Our District's energy management program is an effort to increase our ability to gain energy savings by carefully managing our energy use through good energy use habits.

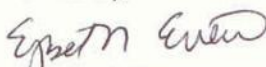
For more than 10 years APS has had a very successful program of using technology to help us monitor and control energy waste. Yet, this can take us only so far. In 2001-2002 the district established its second conservation effort, the APS Energy Conservation Rebate Program. This program focuses on energy conservation awareness and education aimed at 4 key groups at schools: the administrator, at least one teacher, their students, and custodians. Schools in the program receive training to put energy conservation into action and in return receive a portion of their savings directly back into their school's budget. Over the last 4 years, schools have received more than \$420,727.00 in rebates that can be used to enhance their learning environment.

The APS electricity bill for last year was more than \$7.3 million dollars. Even a 10% reduction in electricity cost would equate to almost \$750,000 in savings that could be used for other pressing need in our district. School lighting is estimated to account for as much as 25% of our total electrical cost. Employing some of the same habits on school property that you do at home, i.e. turning lights off when rooms are unoccupied, setting the sleep mode on computers and them turning off at night - all could have dramatic impact on every school's bill. A mere 10% reduction in just the lighting costs would exceed \$182,000 annually. There is a lot that can be done with very little effort.

This year, let's make a real commitment to reduce energy waste by turning off lights, heating and cooling units, and other appliances when not needed. Energy conservation is not only important for cost savings; it helps preserve our environment for future generations. For information on energy efficiency and conservation measures to your school, please contact Ron Rioux, the Energy Conservation Coordinator, at 765-5950, ext. 342.

Thank you for your cooperation.

Sincerely,

  
Elizabeth Everitt



# State of New Mexico

## *Office of the Governor*

Bill Richardson  
Governor

### **EXECUTIVE ORDER 2006-001**

#### **STATE OF NEW MEXICO ENERGY EFFICIENT GREEN BUILDING STANDARDS FOR STATE BUILDINGS**

**WHEREAS**, the State of New Mexico is committed to improving the health of its employees and its citizens, increasing the production and use of clean energy sources, reducing waste, conserving water, and reducing greenhouse gas emissions, and desires to empower sustainable economic development;

**WHEREAS**, the Federal Government through programs fostered within many of its key agencies, numerous State governments as well as municipalities across the U.S. have adopted high performance green building principles through the incorporation of the U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) rating system into their building services;

**WHEREAS**, a recent study by the Lawrence Berkley National Laboratory completed the most definitive cost-benefit analysis of green buildings ever conducted and concluded that the financial benefits of green design are between \$50 and \$70 per square foot in a LEED building, more than 10 times the additional cost associated with building green. Additionally, the large positive impact on employee productivity and health gains suggests that green building has a cost-effective impact beyond just the utility bill savings;

**WHEREAS**, studies have indicated that student attendance and performance is higher in green school buildings;

**WHEREAS**, recognizing that a building's initial construction costs represents only 20-30 percent of the building's entire costs over its 30 to 40 year life, emphasis should be placed on the "life cycle costs" of a public building rather than solely on its initial capital costs; and

**WHEREAS**, the construction industry in the State of New Mexico represents a significant portion of our economy and a significant portion of the building industry is represented by small business and an increase in sustainable building practices will encourage and promote new and innovative small business development throughout the State.

**NOW, THEREFORE**, I, Bill Richardson, Governor of the State of New Mexico, declare that the state adopt specific standards to implement and facilitate the use of high performance energy efficient green building practices for all state-funded existing and new buildings throughout the State of New Mexico.